ABSTRACT

A plasma flat-panel display comprising a hermetically sealed gas filled enclosure. The enclosure includes a top glass substrate having a first pair of parallel sustainer electrodes deposited upon the first substrate, the first pair of sustainer electrodes including a first sustainer electrode and a second sustainer electrode. At least one auxiliary electrode is deposited upon the first substrate parallel to the first pair of sustainer electrodes, the auxiliary electrode being adjacent to the first sustainer electrode in the first pair of sustainer electrodes. A second pair of parallel sustainer electrodes is deposited upon the first substrate parallel to the trigger electrodes, the second pair of sustainer electrodes including a first sustainer electrode and a second sustainer electrode, the sustainer electrode pair being oriented upon the first substrate as a mirror image of the first sustainer electrode pair such that the first sustainer electrode in the second pair of sustainer electrodes is adjacent to the auxiliary electrode. A single common first sustainer electrode pad is electrically connected to the first sustainer electrode in the first sustainer electrode pair and the first sustainer electrode in the second sustainer electrode pair, the first sustainer electrode pad adapted to connected to a first sustainer voltage waveform supply whereby a single supply provides a first sustainer voltage waveform to both of the first sustainer electrodes. The display also includes a thin dielectric film covering the sustaining and auxiliary electrodes and a bottom glass substrate separated from the top glass substrate. The bottom substrate includes a plurality of alternating barrier ribs and microgrooves. An address electrode is associated with each microgroove and a phosphor is deposited over a portion of each address electrode. A first voltage is applied to the trigger electrode to initiate a discharge between the trigger electrode and a sustaining electrode. A second voltage, that is greater than the first voltage is applied to the sustaining electrodes and causes the discharge to extend between the sustaining electrodes.